1. A method performed by a controller embedded in a device for retrieving data from a server, comprising:

sending a command to the server that identifies an instance of the device; and

receiving, from the server and in response to command, data that is specific to the instance of the device.

2. The method of claim 1, wherein the command includes an operational parameter for the device and the data comprises an updated value for the operational parameter.

3. The method of claim 2, wherein the command includes plural operational parameters for the device and the data comprises updated values that differ from current values of the operational parameters.

4. The method of claim 1, wherein the data comprises a list of operational parameters; and

the method further comprises:

sending a second command to the server, which includes operational parameters from the list; and

receiving, from the server and in response to second command, updated values of one or more of the operational parameters included in the second command.

5. The method of claim 1, wherein the data comprises a list of operations to be performed by the controller; and

the method further comprises:

parsing the operations from the list; and

performing the operations from the list.

6. The method of claim 1, wherein the data comprises a configuration file for the device.

7. The method of claim 1, wherein the command identifies the instance of the device by a device type and/or one or more of a serial number and a universal unique identifier.

8. The method of claim 1, wherein the embedded controller sends the command to the server periodically.

9. The method of claim 1, wherein the server runs the Hypertext Transfer Protocol and the command contains Extensible Markup Language Code.

10. A method performed by a server for sending data over a network to a controller embedded in a device, comprising:

receiving a command from the embedded controller;

identifying an instance of the device from information in the command;

retrieving data that is specific to the instance of the device; and

sending the data to the embedded controller.

11. The method of claim 10, wherein:

the command includes a device type and/or one or more of a serial number and a universal unique identifier; and

the instance of the device is identified based on the device type and/or one or more of the serial number and the universal unique identifier.

12. The method of claim 11, further comprising:

parsing the device type and one or more of the serial number and universal unique identifier from the command prior to identifying the instance of the device.

13. The method of claim 10, wherein:

the command includes an operational parameter for the device; and

the data comprises an updated value of the operational parameter.

14. The method of claim 10, wherein:

the data comprises a list of operational parameters for the device; and

the method further comprises:

receiving a second command from the embedded controller, which includes an operational parameter from the list of operational parameters;

obtaining an updated value of the operational parameter; and

sending the updated value of the operational parameter to the embedded controller.

15. The method of claim 10, wherein the data comprises a list of operations to be performed by the device.

16. The method of claim 10, wherein the data comprises a configuration file for the device.

17. The method of claim 10, further comprising:

receiving the data specific to the instance of the device; and

storing the data in memory;

wherein the data is retrieved from the memory.

18. The method of claim 17, wherein the data specific to the instance of the device is received via a Web page generated by the server.

19. The method of claim 10, wherein the server runs the Hypertext Transfer Protocol and the command contains Extensible Markup Language Code.

20. A system comprising:

a controller embedded in a device, the controller being capable of communicating over a computer network; and

a server that is capable of communicating over the computer network;

wherein the embedded controller sends a command to the server over the computer network that identifies an instance of the device and, in response, the server (i) identifies the instance of the device based on the command, (ii) retrieves data that is specific to the instance of the device, and (iii) sends the data to the embedded controller over the computer network.

21. The system of claim 20, wherein the embedded controller is not remotely-addressable from the computer network.

22. The system of claim 20, wherein the computer network comprises the Internet.

23. The system of claim 20, wherein the server runs the Hypertext Transfer Protocol and the command contains

Extensible Markup Language Code.

24. A computer program stored on a computer-readable medium, the computer program being executable by a controller embedded in a device to retrieve data from a server, the computer program comprising instructions that cause the embedded controller to:

send a command to the server that identifies an instance of the device; and

receive, from the server and in response to command, data that is specific to the instance of the device.

25. The computer program of claim 24, wherein the command includes an operational parameter for the device and the data comprises an updated value for the operational parameter.

26. The computer program of claim 25, wherein the command includes plural operational parameters for the device and the data comprises updated values that differ from current values of the operational parameters.

27. The computer program of claim 24, wherein the data comprises a list of operational parameters; and

the computer program further comprises instructions that cause the embedded controller to:

send a second command to the server, which includes operational parameters from the list; and

receive, from the server and in response to second command, updated values of one or more of the operational parameters included in the second command.

28. The computer program of claim 24, wherein the data comprises a list of operations to be performed by the controller; and

the computer program further comprises instructions that cause the embedded controller to:

parse the operations from the list; and

perform the operations from the list.

29. The computer program of claim 24, wherein the data comprises a configuration file for the device.

30. The computer program of claim 24, wherein the command identifies the instance of the device by a device type and/or one or more of a serial number and a universal unique identifier.

31. The computer program of claim 24, wherein the embedded controller sends the command to the server periodically.

32. The computer program of claim 24, wherein the server runs the Hypertext Transfer Protocol and the command contains Extensible Markup Language Code.

33. A computer program stored on a computer-readable medium that is executable by a server to send data over a network to a controller embedded in a device, the computer program comprising instructions that cause the server to:

receive a command from the embedded controller;

identify an instance of the device from information in the command;

retrieve data that is specific to the instance of the device; and

send the data to the embedded controller.

34. The computer program of claim 33, wherein:

the command includes a device type and/or one or more of a serial number and a universal unique identifier; and

the instance of the device is identified based on the device type and/or one or more of the serial number and the universal unique identifier.

35. The computer program of claim 34, further comprising instructions that cause the server to:

parse the device type and one or more of the serial number and universal unique identifier from the command prior to identifying the instance of the device.

36. The computer program of claim 33, wherein:

the command includes an operational parameter for the device; and

the data comprises an updated value of the operational parameter.

37. The computer program of claim 33, wherein:

the data comprises a list of operational parameters for the device; and

the computer program further comprises instructions that cause the server to:

receive a second command from the embedded controller, which includes an operational parameter from the list of operational parameters;

obtain an updated value of the operational parameter; and

send the updated value of the operational parameter to the embedded controller.

38. The computer program of claim 33, wherein the data comprises a list of operations to be performed by the device.

39. The computer program of claim 33, wherein the data comprises a configuration file for the device.

40. The computer program of claim 33, further comprising instructions that cause the server to:

receive the data specific to the instance of the device; and

store the data in memory;

wherein the data is retrieved from the memory.

41. The computer program of claim 40, wherein the data specific to the instance of the device is received via a Web page generated by the server.

42. The computer program of claim 33, wherein the server runs the Hypertext Transfer Protocol and the command contains Extensible Markup Language Code.

43. An apparatus for retrieving data from a server, comprising:

a memory which stores executable instructions; and

a controller which executes the instructions to:

send a command to the server that identifies an instance of the device; and

receive, from the server and in response to command, data that is specific to the instance of the device.

44. The apparatus of claim 43, wherein the command includes an operational parameter for the device and the data comprises an updated value for the operational parameter.

45. The apparatus of claim 44, wherein the command includes plural operational parameters for the device and the data comprises updated values that differ from current values of the operational parameters.

46. The apparatus of claim 43, wherein the data comprises a list of operational parameters; and

the apparatus executes instructions to:

send a second command to the server, which includes operational parameters from the list; and

receive, from the server and in response to second command, updated values of one or more of the operational parameters included in the second command.

47. The apparatus of claim 43, wherein the data comprises a list of operations to be performed by the

controller; and

the apparatus executes instructions to:

parse the operations from the list; and

perform the operations from the list.

48. The apparatus of claim 43, wherein the data comprises a configuration file for the device.

49. The apparatus of claim 43, wherein the command identifies the instance of the device by a device type and/or one or more of a serial number and a universal unique identifier.

50. The apparatus of claim 43, wherein the embedded controller sends the command to the server periodically.

51. The apparatus of claim 43, wherein the server runs the Hypertext Transfer Protocol and the command contains Extensible Markup Language Code.

52. An apparatus for sending data over a network to a controller embedded in a device, comprising:

a memory which stores executable instructions; and

a controller which executes the instructions to:

receive a command from the embedded controller;

identify an instance of the device from information in the command;

retrieve data that is specific to the instance of the device; and

send the data to the embedded controller.

53. The apparatus of claim 52, wherein:

the command includes a device type and/or one or more of a serial number and a universal unique identifier; and

the instance of the device is identified based on the device type and/or one or more of the serial number and the universal unique identifier.

54. The apparatus of claim 53, wherein the apparatus executes instructions to:

parse the device type and one or more of the serial number and universal unique identifier from the command prior to identifying the instance of the device.

55. The apparatus of claim 52, wherein:

the command includes an operational parameter for the device; and

the data comprises an updated value of the operational parameter.

56. The apparatus of claim 52, wherein:

the data comprises a list of operational parameters for the device; and

the apparatus executes instructions to:

receive a second command from the embedded controller, which includes an operational parameter from the list of operational parameters;

obtain an updated value of the operational parameter; and

send the updated value of the operational parameter to the embedded controller.

57. The apparatus of claim 52, wherein the data comprises a list of operations to be performed by the device.

58. The apparatus of claim 52 wherein the data comprises a configuration file for the device.

59. The apparatus of claim 52, wherein:

the apparatus executes instructions to:

receive the data specific to the instance of the device; and

store the data in memory; and

the data is retrieved from the memory.

60. The apparatus of claim 59, wherein the data specific to the instance of the device is received via a Web page generated by the server.

61. The apparatus of claim 52, wherein the apparatus runs the Hypertext Transfer Protocol and the command contains Extensible Markup Language Code.

Appendix A

GET COMMAND

```
GET /Widget/config.xml HTTP/1.1
HOST: www.acme.com
Content-Type: text/xml
Content-length: nnn

<?xml version="1.0"?>
<root xmlns="urn:schemas-upnp-org:device-1-0">
  <specVersion>
    <major>1</major>
    <minor>0</minor>
  </specVersion>
  <device>
    <deviceType>urn:www-acme-
com:device:Widget:3</deviceType>
    <friendlyName>Widget</friendlyName>
    <manufacturer>Acme Industries</manufacturer>
    <modelName>Widget</modelName>
    <modelNumber>3</modelNumber>
    <serialNumber>53266D</serialNumber>
    <UDN>uuid:4A89EA70-73B4-11d4-80DF-0050DAB7BAC5</UDN>
  </device>
</root>
```

Appendix B

POST COMMAND

```
POST /CONTROL HTTP/1.1
Host: www.acme.com
Content-Type: text/xml
Content-length: nnn

<?xml version="1.0"?>
<root xmlns="urn:schemas-upnp-org:device-1-0">
  <specVersion>
    <major>1</major>
    <minor>0</minor>
  </specVersion>
  <device>
    <deviceType>urn:www-acme-
com:device:Widget:3</deviceType>
    <friendlyName>Widget</friendlyName>
    <manufacturer>Acme Industries</manufacturer>
    <modelName>Widget</modelName>
    <modelNumber>3</modelNumber>
    <serialNumber>53266D</serialNumber>
    <UDN>uuid:4A89EA70-73B4-11d4-80DF-0050DAB7BAC5</UDN>
  </device>
</root>
<parameters>
  <Airflow xsd:type="integer">378</Airflow>
  <Humidity xsd:type="double">46.7</Humidity>
  <Motor xsd:type="integer">1500</Motor>
  <Vent xsd:type="integer">4</Vent>
</parameters>
```

And the response containing parameters that have been modified:

```
HTTP/1.1 200 OK
Connection: close
Content-Type: text/xml
Content-length: nnn
Date: Fri, 13 Jun 2000 13:43:05 GMT
```

```
<?xml version="1.0"?>
<parameters>
  <Motor xsd:type="integer">1250</ Motor >
  <Vent xsd:type="integer">2</Vent>
</parameters>
```

20089661.doc